



AESTHETIC AND COSMETIC DERMATOLOGY (LASERS SEPARATE CATEGORY)

## **BUSTING A MODERN MYTH: ETHANOL AT A CONCENTRATION OF 10% IS VERY WELL TOLERATED IN SKIN CARE FORMULATIONS EVEN BY SENSITIVE SKIN SUFFERERS - RESULTS OF 6 INDEPENDENT IN VIVO STUDIES**

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**Background:** Although application of ethanol at low concentrations in skin care products is well tolerated, short-chain alcohols are under discussion as skin irritants and desiccants, especially when cumulatively used for hand hygiene. Therefore, we investigated the skin tolerance of o/w emulsions containing 10% and 20% ethanol in six dermatological studies.

**Materials & Methods:** 236 volunteers with normal, dry, sensitive skin or atopic dermatitis applied the emulsions twice daily for two weeks. i. In two split-face studies, 96 volunteers, half with sensitive skin, compared emulsions with 20% and 10% ethanol or the emulsion vehicle. ii. In two stinging studies, 54 lactic acid sensitive volunteers applied the formulation with 10% ethanol and the vehicle or the formulations with 10% and 20%, resp., to their nasolabial folds. iii. An efficacy study including 42 participants with normal or dry, sensitive skin of the arms investigated clinical and biophysical parameters. iv. A study on 44 AD patients explored the skin tolerability of the 10% formulation and the vehicle.

**Results:** i. Skin tolerance of the 10% emulsion was very good, similar to the vehicle. The 20% emulsion induced more skin and eye burning. ii. The 10% and 20% formulations caused burning sensations in one and seven responder volunteers, resp.; the 10% formulation was comparable to the vehicle. iii. Dryness, scaling and sensitivity improved significantly under all treatments. iv. Skin tolerance of the 10% formulation and the vehicle was comparably high.

**Conclusion:** The 10% formulation provided a beneficial skin tolerance profile similar to the ethanol-free vehicle even in AD patients. All clinical and biophysical efficacy parameters improved after all treatments. Hence, ethanol at the applied concentrations did not show any desiccating effects. As 20% ethanol induced burning sensations in some sensitive volunteers, the use of higher concentrations for facial applications in sensitive skin sufferers may be limited.

